ABSTRACT

Techniques described herein provide low-overhead adaptive instrumentation runtime monitoring and analysis of software. A method of instrumenting a program to provide instrumentation data creates instrumentation versions comprising duplicate versions of original procedures in the program with instrumentation code for capturing instrumentation data, and adaptively decreases the sampling rate of the instrumented version of a procedure as the frequency of execution of the procedure increases. Additionally, the instrumentation methods can be used to build runtime tools that monitor the correctness of a program with very little overhead.